Attorney Docket: 132/43195CDV
PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: ROBERT P. SCARINGE ET AL.

Serial No.: NOT YET ASSIGNED Group Art Unit:

Filed: AUGUST 15, 2001 Examiner:

Title: METHOD OF INTRODUCING AN IN SITUANT INTO A VAPOR COMPRESSION SYSTEM ESPECIALLY USEFUL FOR LEAK DETECTION, AS WELL AS AN APPARATUS FOR LEAK CHECK DEVICE

PRELIMINARY AMENDMENT

Box NEW APPLICATION
Commissioner for Patents
Washington, D.C. 20231

Sir:

Please enter the following amendments to the claims prior to the examination of the application.

IN THE SPECIFICATION:

Please amend the specification as follows:

Pages 34, line 5 - Page 37, line 8:

Referring now to Figure 2, the high voltage section A comprises a low-voltage audio amplifier 1, powered by 12 VDC power source. The amplifier 1 is used in a stable multivibrator mode with a frequency of above 1000 kilohertz as determined by capacitor 2 and variable resistor 5. The output at pin 4 at the amplifier 1 is a square wave that drives a transformer 7 via a capacitor 6. Transformer 7 is an audio transformer connected with a 4 or 8 ohm secondary as the primary. The 1200 ohm secondary delivers 450 volts peak to peak to diode 8, 9, 12 and capacitor 10, 11, 13 comprising of

a voltage-tripler circuit which produces a 450 volt output at point "B".

For the xenon flash tube trigger section B, a 450 VDC voltage is applied to capacitor 16 through resistors 14, 15, the latter being variable. By varying the resistance of resistor 15, the charge time for full voltage on capacitor 16 can be varied to control the flash cycle time of the flash tube 20. The xenon flash tube 20 has the power supply voltage of 450 volts across its terminals, but requires a trigger voltage greater than 6000 volt to the trigger anode to cause the xenon tube 20 to fire. The trigger circuit consists of the capacitor 16, SCR 17, neon lamp 18, and trigger transformer 19. The capacitor 16 charges until the neon lamp 18 has approximately 90 volts across its terminals and breaks down, creating a conductive path between the gate and the anode of SCR 17 which then fires the SCR providing a conductive path between the anode and cathode. The full voltage of the capacitor 16 is passed through the SCR 17 and to the primary of the transformer 19. A stepped up secondary voltage of 10,000 volts to the flash tube anode results and fires the xenon flash tube 20. The recharge cycle begins again.

In the embodiment of Figure 3, the circuit uses a pot core transformer 24 which performs two functions. Coil N1 provides a feedback to the driving transistor 23 configured in a modified Hartly oscillator. NPN transistor 3 oscillates at a frequency based on resistor 21, capacitors 21, 26 and switches a pulsed 12 VDC to the primary (N2 winding) of the transformer 24. Coil N2 provides the primary winding of a transformer. The voltage is stepped up in secondary coil N3 of the transformer and is rectified and filtered by diode 25

and capacitor 6 producing a output voltage to the flash tube trigger circuit at point "B".

A 275 VDC voltage is applied to the capacitor 27 through resistor 28 and 29. By changing the resistance of the resistor 29, the full voltage charge time on the capacitor 27 can be varied to control the flash recycle time of the flash tube 33. The flash tube 33 has a power supply voltage of greater than 275 volts across its terminals but requires a trigger voltage greater than 6,000 volts to the trigger anode to cause the xenon tube 33 to fire. The trigger circuit consists of the capacitor 27, SCR 30, neon lamp 31, and transformer 32. Capacitor 27 charges until neon lamp 31 has approximately 90 volts across its terminals and breaks down, creating a conductive path between the gate and the anode of SCR 30 that fires the SCR. The full voltage of the capacitor 27 is passed through the SCR 30 and to the primary of transformer 32 resulting in a stepped up secondary voltage of at least 6,000 volts to the flash tube anode which fires the xenon flash tube 33. The recharge cycle begins again.

In the embodiment of Figure 4, the integrated circuit (IC) is a 555 timer circuit 34, powered by 12 VDC, used in a stable multivibrator mode. The frequency output of IC 34 is determined by potentiometer resistor 35. The IC 34 provides a pulsed voltage to the base of NPN transistor 36 which switches a pulsed 12 VDC to the primary of setup transformer 37. The voltage is stepped up in the secondary winding of the transformer and is then rectified and filtered by diode 38 and capacitor 39 producing an output voltage to the flash tube trigger circuit at point "B".

A greater than 275 VDC voltage is applied to capacitor 42 through resistors 40,41, the latter being variable. By changing the resistance of variable resistor 14, the full

voltage charge time on capacitor 42 can be varied to control the flash recycle time of the flash tube 46. The flash tube 46 has the power supply voltage of greater than 275 volts across its terminals but requires a trigger voltage greater than 6,000 volts to the trigger anode to cause the xenon tube 46 to fire. The trigger circuit consists of capacitor 42, SCR 43, neon lamp 44, and trigger transformer 45. Capacitor 42 charges until neon lamp 44 has approximately 90 volts across it's terminals and breaks down, creating a conductive path between the gate and the anode of SCR 43 that fires the SCR providing a conductive path between the anode and cathode. The full voltage of capacitor 42 is passed through SCR 43 and to the primary of transformer 45 resulting in a stepped up secondary voltage of 6,000 volts to the flash tube anode which fires the xenon flash tube 46. The recharge cycle begins again.

IN THE CLAIMS:

Please cancel Claims 1-38 and 45-46, without prejudice to or disclaimer of the subject matter therein.

REMARKS

Claims 39-44 are pending herein. By this Preliminary Amendment, the specification is amended and Claims 1-38 and 45-46 are canceled. Entry of the amendments to the claims before examination of the application is respectfully requested.

If there are any questions regarding this Preliminary Amendment or this application in general, a telephone call to the undersigned would be appreciated since this should expedite the prosecution of the application for all concerned.

It is respectfully requested that, if necessary to effect a timely response, this paper be considered as a Petition for an Extension of Time sufficient to effect a timely response and shortages in other fees, be charged, or any overpayment in fees be credited, to the Account of Evenson, McKeown, Edwards & Lenahan, P.L.L.C., Deposit Account No. 05-1323 (Docket #43195CDV).

August 15, 2001

Respectfully submitted,

Warren A. Zitlau
Registration No. 39,085

James F. McKeown
Registration No. 25,406

JFM:WAZ:vca
CROWELL & MORING, L.L.P.
P.O. Box 14300
Washington, DC 20044-4300
Telephone No.: (202) 628-8800
Facsimile No.: (202) 628-8844

ATTACHMENT WITH MARKED-UP VERSION SHOWING CHANGES MADE

IN THE SPECIFICATION:

Please amend the specification as follows:

Pages 34, line 5 - Page 37, line 8:

Referring now to Figure 2, the high voltage section A comprises a low-voltage audio amplifier 1, powered by 12 VDC power source. The amplifier 1 is used in a stable multivibrator mode with a frequency of above 1000 kilohertz as determined by capacitor 2 and variable resistor 5. The output at pin [5] 4 at the amplifier 1 is a square wave that drives a transformer 7 via a capacitor 6. Transformer 7 is an audio transformer connected with a 4 or 8 ohm secondary as the primary. The 1200 ohm secondary delivers 450 volts peak to peak to diode 8, 9, 12 and capacitor 10, 11, 13 comprising of a voltage-tripler circuit which produces a 450 volt output at point "B".

For the xenon flash tube trigger section B, a 450 VDC voltage is applied to capacitor 16 through resistors 14, 15, the latter being variable. By varying the resistance of resistor 15, the charge time for full voltage on capacitor 16 can be varied to control the flash cycle time of the flash tube 20. The xenon flash tube 20 has the power supply voltage of 450 volts across its terminals, but requires a trigger voltage greater than 6000 volt to the trigger anode to cause the xenon tube 20 to fire. The trigger circuit consists of the capacitor 16, SCR 17, neon lamp 18, and trigger transformer 19. The capacitor 16 charges until the neon lamp 18 has approximately 90 volts across its terminals and breaks down, creating a conductive path between the gate and the anode of SCR 17 which then fires the SCR providing a conductive path between the anode and cathode. The full

voltage of the capacitor 16 is passed through the SCR 17 and to the primary of the transformer 19. A stepped up secondary voltage of 10,000 volts to the flash tube anode results and fires the xenon flash tube 20. The recharge cycle begins again.

In the embodiment of Figure 3, the circuit uses a pot core transformer [4] 24 which performs two functions. Coil N1 provides a feedback to the driving transistor [3] 23 configured in a modified Hartly oscillator. NPN transistor 3 oscillates at a frequency based on resistor [1] 21, capacitors [2, 6] 21, 26 and switches a pulsed 12 VDC to the primary (N2 winding) of the transformer [4] 24. Coil N2 provides the primary winding of a transformer. The voltage is stepped up in secondary coil N3 of the transformer and is rectified and filtered by diode [5] 25 and capacitor 6 producing a output voltage to the flash tube trigger circuit at point "B".

A 275 VDC voltage is applied to the capacitor [7] 27 through resistor [8] 28 and [9] 29. By changing the resistance of the resistor [9] 29, the full voltage charge time on the capacitor [7] 27 can be varied to control the flash recycle time of the flash tube [13] 33. The flash tube [13] 33 has a power supply voltage of greater than 275 volts across its terminals but requires a trigger voltage greater than 6,000 volts to the trigger anode to cause the xenon tube [13] 33 to fire. The trigger circuit consists of the capacitor [7] 27, SCR [10] 30, neon lamp [11] 31, and transformer [12] 32. Capacitor [7] 27 charges until neon lamp [11] 31 has approximately 90 volts across its terminals and breaks down, creating a conductive path between the gate and the anode of SCR [10] 30 that fires the SCR. The full voltage of the capacitor [7] 27 is passed through the SCR [10] 30 and

to the primary of transformer [12] 32 resulting in a stepped up secondary voltage of at least 6,000 volts to the flash tube anode which fires the xenon flash tube [13] 33. The recharge cycle begins again.

In the embodiment of Figure 4, the integrated circuit (IC) is a 555 timer circuit [1] 34, powered by 12 VDC, used in a stable multivibrator mode. The frequency output of IC [1] 34 is determined by potentiometer resistor [5] 35. The IC [1] 34 provides a pulsed voltage to the base of NPN transistor [8] 36 which switches a pulsed 12 VDC to the primary of setup transformer [9] 37. The voltage is stepped up in the secondary winding of the transformer and is then rectified and filtered by diode [10] 38 and capacitor [11] 39 producing an output voltage to the flash tube trigger circuit at point "B".

A greater than 275 VDC voltage is applied to capacitor [12] 42 through resistors [13, 14] 40,41, the latter being variable. By changing the resistance of variable resistor [14] 14, the full voltage charge time on capacitor [12] 42 can be varied to control the flash recycle time of the flash tube [18] 46. The flash tube [18] 46 has the power supply voltage of greater than 275 volts across its terminals but requires a trigger voltage greater than 6,000 volts to the trigger anode to cause the xenon tube [18] 46 to fire. The trigger circuit consists of capacitor [12] 42, SCR [15] 43, neon lamp [16] 44, and trigger transformer [17] 45. Capacitor [12] 42 charges until neon lamp [16] 44 has approximately 90 volts across it's terminals and breaks down, creating a conductive path between the gate and the anode of SCR [15] 43 that fires the SCR providing a conductive path between the anode and cathode. The full voltage of capacitor [12] 42 is passed through SCR [15] 43 and to the primary of transformer [17] 45 resulting in

a stepped up secondary voltage of 6,000 volts to the flash tube anode which fires the xenon flash tube [18] 46. The recharge cycle begins again.